Survey of Selected Wetlands within the Bureau of Land Management White River Resource Area (Rio Blanco, Garfield, and Moffat Counties, CO) 2008

Natural Heritage Program COLORADO

Colorado State University

Survey of Selected Wetlands within the
Bureau of Land Management
White River Resource Area

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April 2008

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Cover photographs (clockwise): Crooked Wash and Box Elder Creek Spring. Photos taken by Denise Culver

ACKNOWLEDGMENTS

Financial support for this study was provided by the Bureau of Land Management's State Office and White River Field Office. We greatly appreciate the continued support and assistance of Jay Thompson at the BLM State Office. Mary Taylor at the White River Field Office was instrumental in the success of this project. We appreciate all of the landowners who allowed us access through their property, especially one landowner that helped us dislodge our vehicle from a creek bank!

EXECUTIVE SUMMARY

In 2007, the Colorado Natural Heritage Program (CNHP) and Colorado State University received funding from the Bureau of Land Management (BLM), White River Field Office and the State Office to survey selected wetlands, with emphasis on seeps and springs, located on BLM lands in Rio Blanco, Garfield, and Moffat counties, Colorado.

The project was conducted concurrently with the Survey of Critical Biological Resources in Rio Blanco County (Culver et al. 2008), thus leveraging both money and staff towards identifying critical biological resources throughout the White River Resource Area. Additionally, this project continues to build upon data compiled from six previous BLM Seeps and Springs Survey Projects (Rocchio et al. 2001; Doyle et al. 2002; Doyle 2003; Culver 2004; Rocchio 2004; Neid 2006; Jones and Culver 2006).

Springs and seeps are unique habitats, which have often been found to harbor concentrations and refuges of endemic plants and animals. Because seeps and springs provide relatively constant water temperature and chemistry, due to their dependence on subterranean flow through aquifers, many spring source species do not occupy downstream habitats where temporal fluctuations in water temperature and flow are greater (USDI BLM 2000; Martinson 1980). Surveys conducted in the Great Basin have shown that seeps and springs are often hot spots of biological diversity, providing habitat for many uncommon species of plants and animals. In Colorado, several rare plant and animal species are known to be limited to these wet areas within otherwise dry landscapes, especially on the west slope. Seeps and springs are important to regional landscape diversity, where most areas receive less than 10 inches of annual precipitation, as they provide small but widely distributed habitat that offers a source of water, food, cover, nesting habitat, and habitat for rare and/or unique species.

During the field season of 2007, CNHP surveyed a total of 12 parcels; 6 were in Proper Functioning Condition, 2 were Functioning At Risk (downward trend), and 4 were Nonfunctional.

Two wetlands are located within Potential Conservation Areas and assigned a Biodiversity Rank, according to Natural Heritage Program methodology. The Lake Creek and Soldier Creek Potential Conservation Areas were documented as wetlands of high biodiversity value (B3) due to the presence of the globally vulnerable (G3) riparian plant associations These sites will also be included in the Survey of Critical Biological Resources in Rio Blanco County final report (Culver et al. 2008).

Table of Contents

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

Surveys conducted in the Great Basin have shown that seeps and springs are often hot spots of biological diversity, especially for rare and endemic species of spring snails (Sada et al. 2001; USDI BLM 2001). Because seeps and springs provide relatively constant water temperature and chemistry, due to their dependence on subterranean flow through aquifers, many spring source species do not occupy downstream habitats where temporal fluctuations in water temperature and flow are greater (USDI BLM 2001; USDI BLM 2000; Martinson 1980).

Factors affecting the quality of the seeps and springs in the Rio Blanco County, especially in Piceance Creek Basin, include spring development, oil and gas operations, and livestock grazing. Many changes occur at seeps and springs that are developed or disturbed from their natural condition. For example, non-native taxa comprise a greater proportion of the riparian vegetation at disturbed springs. Because human activity has been focused on these ecosystems, leading to alteration and loss of native species, it is important to identify any seeps and springs in good condition, and to assess impacted areas for restoration potential.

The objective of this project was to survey and evaluate proper functioning condition for selected seeps and springs (lentic) and riparian (lotic) wetlands on BLM land in the White River Field Office. This project was completed in conjunction with the Survey of Critical Biological Resources in Rio Blanco County, CO, with financial support from the Colorado Department of Natural Resources funded via a wetland program grant from the Environmental Protection Agency, Region 8, Rio Blanco County, Division of Wildlife, and Great Outdoors Colorado.

Seeps/Springs Ecology

Seeps and springs are small wetland ecosystems that are hydrologically supported by groundwater discharge (Sada et al. 2001; Hynes 1970). They are distinctive from other wetland and riparian habitats by the relatively constant water temperature and chemistry of the discharging groundwater (Sada et al. 2001). This results from the groundwater being in contact with minerals for an extended period of time, which equilibrates solute concentrations. Thus, spring water tends to have constant concentrations of dissolved minerals while surface-fed streams vary in response to rainfall and snowmelt (McCabe 1998).

Seeps differ from springs in that they often periodically dry and consequently support a lower diversity of wetland vegetation. Springs often have a more persistent source of water and thus support a greater diversity of wetland vegetation and provide aquatic habitat (Sada et al. 2001). However, springs supported by local aquifers may periodically dry out, since local aquifers are comparatively small and shallow, and the amount of groundwater discharge associated with them varies in response to local precipitation levels. Springs supported by regional aquifers, or aquifers covering thousands of square

kilometers, rarely dry, even during droughts, since the quantity of water within the aquifer is high and the groundwater flow is typically slow (Sada et al. 2001).

Many springs in western North America, below an elevation of 7000 feet, are isolated from other wetlands, frequently flow a short distance before infiltrating back into the ground and periodically drying out (Hendrickson and Minckley 1984). This lack of connectivity restricts dispersal of many macroinvertebrates and fishes and thus, along with unique environmental characteristics (water chemistry, geology, etc.), has resulted in many unique and endemic species occupying isolated spring wetlands.

Spring environments (water temperature, water chemistry, etc.) are typically less variable than other aquatic habitats such as lakes, ponds, and streams. This results in low variability in macroinvertebrate populations at spring sources while downstream habitats typically show more variability in population dynamics (Sada et al. 2001). In addition, the factors that lead to the evolution of endemic species or to the value of these isolated wetlands as refugia for relict species can also result in low species richness due to the small size, isolation, and adverse conditions of these wetlands (Myers and Resh 1999).

Martinson (1980) found that macroinvertebrate populations in the Piceance Basin, Colorado had greater density and biomass but fewer species (less diversity) at spring sources than in downstream habitats. This may be attributed to various factors: (a) constant, or less variable, environmental conditions at spring sources may prevent the initiation or completion of the life cycles of some species; (b) those organisms able to survive these conditions may be able to expand their populations due to less competition; (c) the absence of suspended particles in discharging groundwater does not allow filter feeding organisms to survive; and (d) drift patterns may play a role, since there are no upstream sources of macroinvertebrates for the springs (many occur at the headwaters of first-order streams) (Martinson 1980). In that study, Martinson also found that, although many spring sources had similar water temperatures and water chemistry, they often exhibited a different suite of macroinvertebrate species. This may be due to the variation in topographic gradients in which the springs occur, which influence water depth, water velocity, seasonal fluctuations, and substrate type (e.g. gravel vs. silt).

Seeps and springs often exhibit diverse flora composition and structural characteristics that provide potential cover for resting, nesting, and feeding for many different organisms, especially birds (Sada et al. 2001). For example, submergent vegetation such as pondweed *(Potamogeton* sp.), duckweed (*Lemna* sp.), ditch-grass (*Ruppia* sp.), horned-pondweed (*Zannichellia* sp.), and watercress (*Rorippa* sp.) provide a food source for waterfowl, while watercress has been shown to be a critical resource for mollusks (Sada and Nachlinger 1996). Sedges (*Carex utriculata*), rushes (*Juncus balticus* and *J. saximontanus*), grasses (*Agrostis gigantea* and *Glyceria striata*), and other herbaceous species such as alkali crowfoot (*Halerpestes cymbalaria* ssp. *saximontana*), which are often found growing along the banks of spring brooks and in spring wetlands, help regulate water temperatures and provide areas for hiding and nesting, in addition to the habitat they provide for macroinvertebrates (Sada and Nachlinger 1996). Some springs in the project area support an over story of occasional trees (*Populus angustifolia*) and

shrubs such as thinleaf alder (*Alnus incana*) and various willows (*Salix* spp.), which provide excellent habitat for birds and browse for large mammals.

Many seeps and springs in the Piceance Creek Basin have been altered and/or modified from their natural condition due to anthropogenic disturbances such as mining activities, livestock grazing and diversions and impoundments to capture water for human or livestock use. These disturbances can result in an increase in non-native species, decrease in vegetation cover, inundation of spring brook habitat, replacement of species requiring flowing water with those more adapted to stagnate or slow moving water (lakes, ponds, etc.), and cause the extirpation of endemic spring species (Sada and Vinyard 2002). Sada and Nachlinger (1996) found higher levels of biodiversity in undisturbed springs while disturbed springs had a high percentage of non-native species present.

Diversions, which decrease flow from spring sources, can result in greater variation of water temperature which causes a shift in the composition of macroinvertebrate species from those adapted to spring source habitats, where water temperature is fairly constant, to those adapted to downstream habitats, where water temperature exhibits more variation. In addition, typically an increase in water temperature, which often occurs when water flow is decreased, decreases the number of aquatic invertebrate species found in that location (Myers and Resh 1999). Seeps and springs which are isolated, are especially susceptible to disturbances since they lack connectivity, and thus, have few mechanisms for recolonization via drift and upstream movements. Restoring disturbed wetlands can result in the reestablishment of wetland plant species and adequate vegetation structure; however it does not guarantee the restoration of endemic fauna, especially for species that have limited dispersal capabilities (Myers and Resh 1999).

METHODS

Survey Site Selection

BLM managers determined the wetland locations to be field surveyed (Figure 1). A Riparian – Wetland Functional Checklist was completed for every parcel according to the Process for Assessing Proper Functioning Condition for Lotic and Lentic Riparian-Wetland Areas (USDI BLM 1994 and 1998).

Information collected at each wetland included the items listed below. Items 1 and 3 are further described in the following sections.

1. Proper Functioning Condition information;
2. General description of parcel and ecological processes, physical and biological disturbances, developments, use by wildlife or livestock and the presence of threatened, endangered and sensitive plants and noxious weeds were noted;
3. Classification of wetland and riparian plant associations (Carsey et al. 2003a);

Proper Functioning Condition

Proper Functioning Condition is a qualitative method for assessing the condition of riparian-wetland areas. It enables a consistent approach for considering hydrology, vegetation, and erosion attributes to assess riparian health. (USDI BLM 1993). This method categorized wetlands-riparian areas into three major types:

- Proper Functioning Condition (PFC)—a wetland area that supports adequate vegetation, unaltered hydrology, and erosion/deposition features to dissipate floodwaters, stabilize streambanks, etc.
- Functioning At Risk (FAR)—a wetland area that is in functional condition but an existing soil, water, or vegetation attribute makes it susceptible to degradation. Trends are also noted.
- Nonfunctional (NF)—a wetland area that does not provide adequate vegetation, landform attributes to dissipate floodwaters, improve water quality, etc.

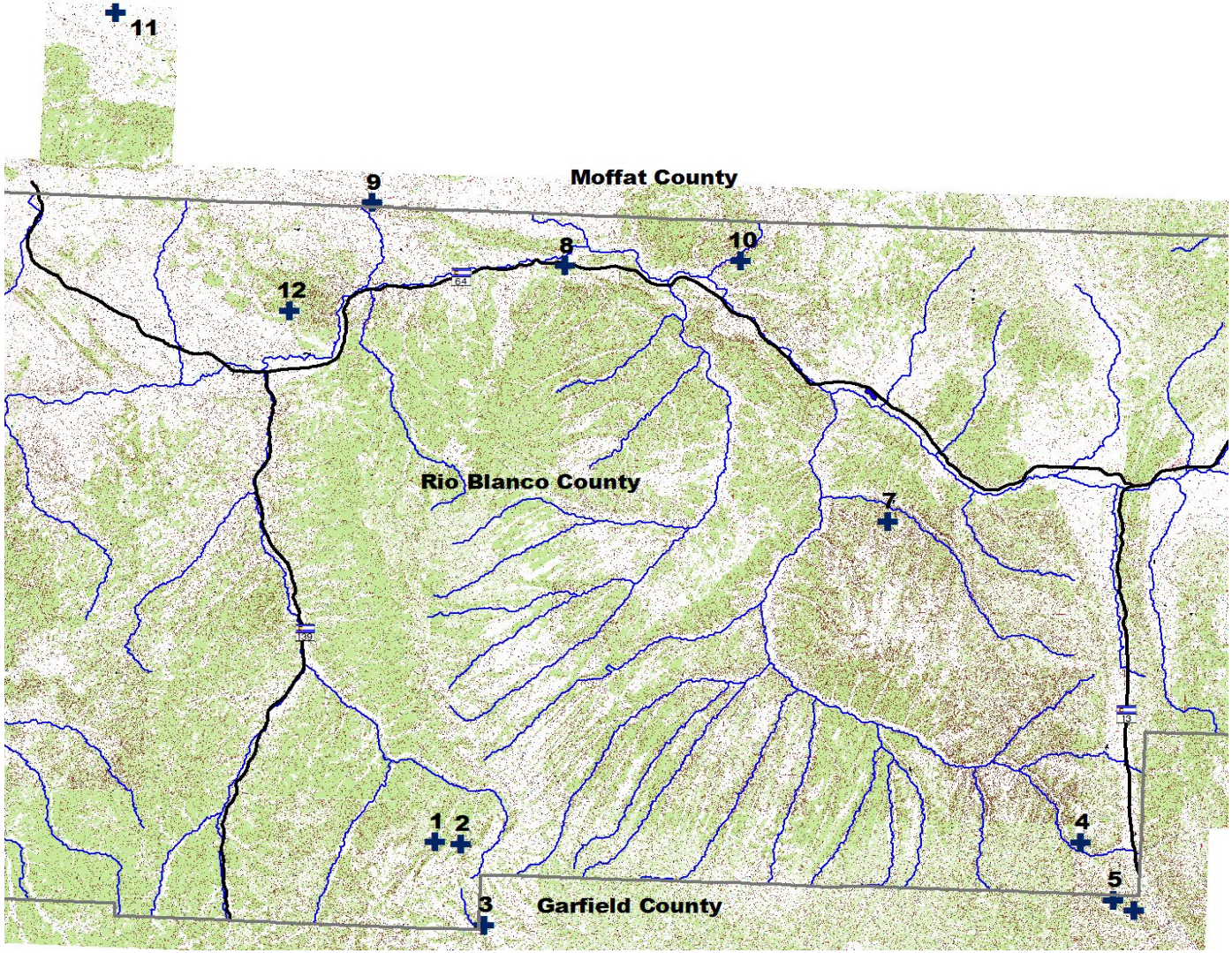

Figure 1. Location of riparian-wetland areas surveyed on BLM Properties.

Colorado Natural Heritage Program Wetland and Riparian Plant Association Classification

The Comprehensive Statewide Wetlands Classification and Characterization (CSWCC) (Carsey et al. 2003b) and the Field Guide to the Wetland and Riparian Plant Associations of Colorado (Carsey et al. 2003a) are based on dominant vegetation. The CSWCC follows the International Vegetation Classification System, the national standard for classification and inventory (Anderson et al. 1998; Maybury 1999, Comer et al. 2003).

At each parcel that supported a wetland or riparian area, the CSWCC was used to classify the plant community association (element), designate the global and state rarity rank, and determine its element occurrence rank.

The Natural Heritage Program Ranking System

Key to the functioning of Natural Heritage Programs is the concept of setting priorities for gathering information and conducting inventories. The number of possible facts and observations that can be gathered about the natural world is essentially limitless. The financial and human resources available to gather such information are not. Because biological inventories tend to be under-funded, there is a premium on devising systems that are both effective in providing information that meets users' needs and efficient in gathering that information. The cornerstone of Natural Heritage inventories is the use of a ranking system to achieve these twin objectives of effectiveness and efficiency.

Ranking species and ecological associations according to their imperilment status provides guidance for where Natural Heritage Programs should focus their information-gathering activities. For species deemed secure, only general information needs to be maintained by Natural Heritage Programs. Fortunately, the more common and secure species constitute the majority of most groups of organisms. On the other hand, for those species that are by their nature rare, more detailed information is needed. Because of these species' rarity, gathering comprehensive and detailed population data can be less daunting than gathering similarly comprehensive information on more abundant species.

To determine the status of species within Colorado, CNHP gathers information on plants, animals, and plant associations. Each of these elements of natural diversity is assigned a rank that indicates its relative degree of imperilment on a five-point scale (for example, 1 = extremely rare/imperiled, 5 = abundant/secure) (Table 1). The primary criterion for ranking elements is the number of occurrences (in other words, the number of known distinct localities or populations). This factor is weighted more heavily than other factors because an element found in one place is more imperiled than something found in twenty-one places. Also of importance are the size of the geographic range, the number of individuals, the trends in both population and distribution, identifiable threats, and the number of protected occurrences.

Element imperilment ranks are assigned both in terms of the element's degree of imperilment within Colorado (its State-rank or S-rank) and the element's imperilment over its entire range (its Global-rank or G-rank). Taken together, these two ranks indicate the degree of imperilment of an element.

Global imperilment ranks are based on the range-wide status of a species. State imperilment ranks are based on the status of a species in an individual state. State and Global ranks are denoted with an "S" or a "G" respectively, followed by a number or letter. These ranks should not be interpreted as legal designations.

Table 1. Definition of natural heritage imperilment ranks.

G/S1	Critically imperiled globally/state because of rarity (5 or fewer occurrences in the world/state; or 1,000 or fewer individuals), or because some factor of its biology makes it especially vulnerable to extinction.
G/S2	Imperiled globally/state because of rarity (6 to 20 occurrences, or 1,000 to 3,000 individuals), or because other factors demonstrably make it very vulnerable to extinction throughout its range.
G/S3	Vulnerable through its range or found locally in a restricted range (21 to 100 occurrences, or 3,000 to 10,000 individuals).
G/S4	Apparently secure globally/state, though it may be quite rare in parts of its range, especially at the periphery. Usually more than 100 occurrences and 10,000 individuals.
G/S5	Demonstrably secure globally/state, though it may be quite rare in parts of its range, especially at the periphery.
G/SX	Presumed extinct globally, or extirpated within the state.
G#?	Indicates uncertainty about an assigned global rank.
G/SU	Unable to assign rank due to lack of available information.
GQ	Indicates uncertainty about taxonomic status.
G/SH	Historically known, but usually not verified for an extended period of time.

Element Occurrences and their Ranking

Actual locations of elements, whether they are single organisms, populations, or plant associations, are referred to as element occurrences. The element occurrence is considered the most fundamental unit of conservation interest and is at the heart of the Natural Heritage Methodology. Whenever sufficient information is available, an element

occurrence rank (EO-Rank) is assigned according to the ecological quality of the occurrences to prioritize element occurrences for a given species. This ranking system is designed to indicate which occurrences are the healthiest and most ecologically viable, thus focusing conservation efforts where they will be most successful (Table 2). The EO-Rank is based on three factors:

Size–a measure of the area or abundance of the element's occurrence, relative to other known, and/or presumed viable, examples. Takes into account factors such as area of occupancy, population abundance, population density, population fluctuation, and minimum dynamic area (which is the area needed to ensure survival or re-establishment of an element after natural disturbance).

Condition/Quality–an integrated measure of the composition, structure, and biotic interactions that characterize the occurrence. This includes factors such as reproduction, age structure, biological composition (such as the presence of non-native versus native species), structure (for example, canopy, understory, and ground cover in a forest community), and biotic interactions (such as levels of competition, predation, and disease).

Landscape Context–an integrated measure of two factors: the dominant environmental regimes and processes that establish and maintain the element, and connectivity. Dominant environmental regimes and processes include herbivory, hydrologic and water chemistry regimes (surface and groundwater), geomorphic processes, climatic regimes (temperature and precipitation), fire regimes, and many kinds of natural disturbances. Connectivity includes such factors as a species having access to habitats and resources needed for life cycle completion, fragmentation of ecological associations and systems, and the ability of the species to respond to environmental change through dispersal, migration, or re-colonization.

Each of these three factors is rated on a scale of A through D, with A representing an excellent grade and D representing a poor grade. These grades are then averaged to determine an appropriate EO-Rank for the occurrence. If not enough information is available to rank an element occurrence, an EO-Rank of E is assigned. EO-Ranks and their definitions are summarized in Table 2.

CNHP tracks all natural communities, however only the best known or highest quality occurrences of common plant communities (G4 and G5) will be prioritized for data entry (Table 3).

Table 2. Element occurrence ranks and their definitions.

A	Excellent viability.
B	Good viability
C	Fair viability.
D	Poor viability.
H	Historic: known from historical record, but not verified for an extended period of time.
X	Extirpated (extinct within the state).
E	Extant: the occurrence does exist but not enough information is available to rank.
F	Failed to find: the occurrence could not be relocated.

Table 3. Element tracking guidelines for plant communities.

	Element Occurrence Rank to be Tracked			
Global Rank	A	B	C	D
G1,G2,G3,GU,G?				
G4,G5				

 = Track All EOs

 = Track only if it is the highest ranking occurrence known in the study area.

RESULTS

Twelve wetlands were surveyed from June 2007 through September 2007 (Appendix A). Six were determined to be Proper Functioning Condition, 2 were Functioning At Risk, and 4 were determined as Nonfunctional (Table 4, Figure 2).

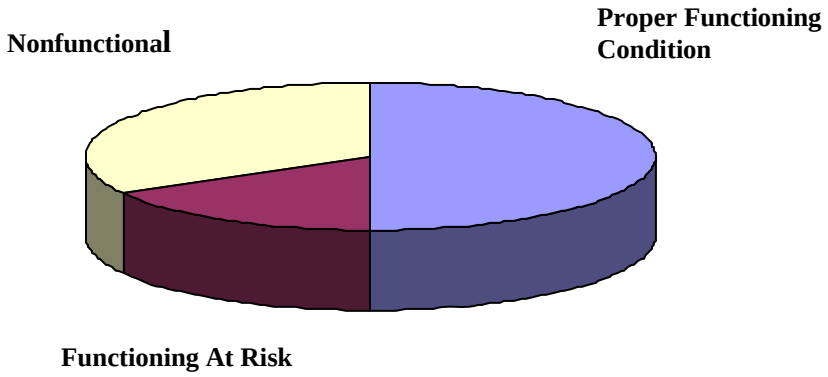

Figure 2. Summary of Proper Functioning Condition analysis.

Table 4. BLM Survey Sites with Indication of Function. CNHP Potential Conservation Sites (Culver et al. *in prep*) are indicated in bold.

BLM Survey Site	BLM Site Name	PFC	FAR	FAR Trend	Non Functioning	CNHP Plant Association	Global/ State Rank	Element Occurrence Rank	PCA Name/Biodiversity Rank
#1	**Lake Creek**	**X**				***Pseudotsuga menziesii/ Betula occidentalis***	**G3?S3**	**A**	**Lake Creek/B3**
#2	**Soldier Creek**	**X**				***Acer negundo/ Prunus virginiana*** ***Pseudotsuga menziesii/ Acer glabrum***	**G3S2** **G4?S2**	**A** **A**	**Soldier Creek/B3**
#3	Brush Creek				X	NA			
#4	Upper Piceance Creek				X (not found)	NA			
#5	Cow Creek	X				NA			
#6	Upper Cow Creek				X	NA			
#7	Greasewood Gulch				X (not found)	NA			
#8	Monument Gulch	X				NA			
#9	Box Elder Spring (W Coal Reservoir)		X	down		NA			
#10	Crooked Creek (Colorado Gulch)	X				NA			
#11	Meadow Creek		X	down		NA			
#12	Chase Draw	X				NA			

*element occurrence is globally secure, does not meet CNHP's element ranking criteria, see Table 3.

CNHP Significant Element Associated with BLM Springs

Two BLM survey sites are located in Potential Conservation Areas (PCAs) and will be included in the Survey of Critical Biological Resources in Rio Blanco County (Culver et al. *in prep.*) due to the presence of significant wetland plants and/or plant communities (Table 5). Three CNHP wetland plant associations were documented: 2 globally vulnerable (G3), and 1 apparently secure globally (G4) (Table 6).

Table 5. Potential Conservation Areas.

PCA Name	B Rank	BLM Survey Site
Soldier Creek	B3	BLM #2
Lake Creek	B3	BLM #1

Table 6. CNHP Plant Communities documented on BLM Survey Sites.

CNHP Plant Community Scientific Name	CNHP Plant Community Common Name	Global/ State Rank	BLM Parcel Name
Acer negundo/ *Prunus virginiana*	Boxelder/ chokecherry	G3S2	Soldier Creek. BLM #2
Pseudotsuga menziesii/ *Betula occidentalis*	Douglas fir/ River birch	G3?S3	Lake Creek BLM #1
Pseudotsuga menziesii/ *Acer glabrum*	Douglas fir/ Rocky Mountain maple	G4?S1	Soldier Creek BLM #2

DISCUSSION

The Survey of Selected Wetlands within the Bureau of Land Management's White River Resource Area project identified 67% of the BLM parcels as being either Proper Functioning Condition (PFC) or Functioning At Risk (FAR). The two wetlands assessed to be FAR were determined to have a downward trend due to recent changes in management practices, in particular grazing regimes.

Two of the BLM wetlands, both in PFC, were determined to be Potential Conservation Areas due to the presence of significant wetland and riparian plant associations that can serve as priorities for management decisions and ACEC designations.

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APPENDIX A

BLM RIPARIAN – WETLAND FUNCTIONAL CHECKLISTS

Lake Creek BLM #1
Proper Functioning Condition

Standard Checklist

Rio Blanco County
Date: June 14, 2007
Location: 12S 43999350 705710
T4S R100W Sec 10 4 NE
Razorback Ridge Quadrangle 3910865
Miles: less 0.5 miles Acres: 2

ID Team Observers: Culver and Huggins

Yes	No	N/A	HYDROLOGY
X			1) Floodplain above blankfull is inundated in "relatively frequent" events
		X	2) Where beaver dams are present they are active and stable
X			3) Sinuosity, width/depth ratio, and gradient are in balance with the landscape setting (i.e., landform, geology, and bioclimatic region)
X			4) Riparian-wetland area is widening or has achieved potential extent
X			5) Upland watershed is not contributing to riparian-wetland degradation

Yes	No	N/A	VEGETATION
X			6) There is diverse age-class distribution of riparian-wetland vegetation (recruitment for maintenance/recovery)
X			7) There is diverse composition of riparian-wetland vegetation (for maintenance/recovery)
X			8) Species present indicate maintenance of riparian-wetland soil moisture characteristics
X			9) Streambank vegetation is comprised of those plants or plant communities that have root masses capable of withstanding high streamflow events
X			10) Riparian-wetland plants exhibit high vigor
X			11) Adequate vegetative cover is present to protect banks and dissipate energy during high flows
X			12) Plant communities are an adequate source of coarse and/or large woody material for maintenance/recovery)

Yes	No	N/A	EROSION/DEPOSITION
X			13) Floodplain and channel characteristics (i.e., rocks, overflow channels, coarse and/or large woody material) are adequate to dissipate energy
		X	14) Point bars are revegetating with riparian-wetland vegetation
		X	15) lateral stream movement is associated with natural sinuosity
X			16) System is vertically stable
X			17) Stream is in balance with the water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition)

Remarks

(include description of soils e.g., gleying, mottles, texture, species list and percent cover of dominant plants, aquatic plants or animals present, human influences, watershed quality)
Soils: alluvium with small to medium rocks

Plants: *Pseudotsuga menziesii, Betula occidentalis, Cornus sericea, Acer glabrum, Symphoricarpos rotundifolius, Ribes aureum, Ribes, inerme, Rosa woodsii, Quercus gambelii, Prunus virginiana, Virgulaster ascendens, Juncus balticus, Carex microptera,* Non natives include: *Poa pratensis, Bromus inermis, Breea arvensis, Cynoglossum officinale*

Did not locate the spring discharge area, likely either hidden by vegetation or further upstream. The wetland is dominated by birch with forb understory. No hydrological alterations present, very little domestic livestock grazing. Bear sign observed

Summary Determination

Functional Rating:

Proper Functioning Condition X
(adequate veg., landform, or debris is present to dissipate energies, filter sediment, improve groundwater recharge, develop root masses to stabilize shoreline, restrict percolation, provide wildlife and fish habitat, support biodiversity)

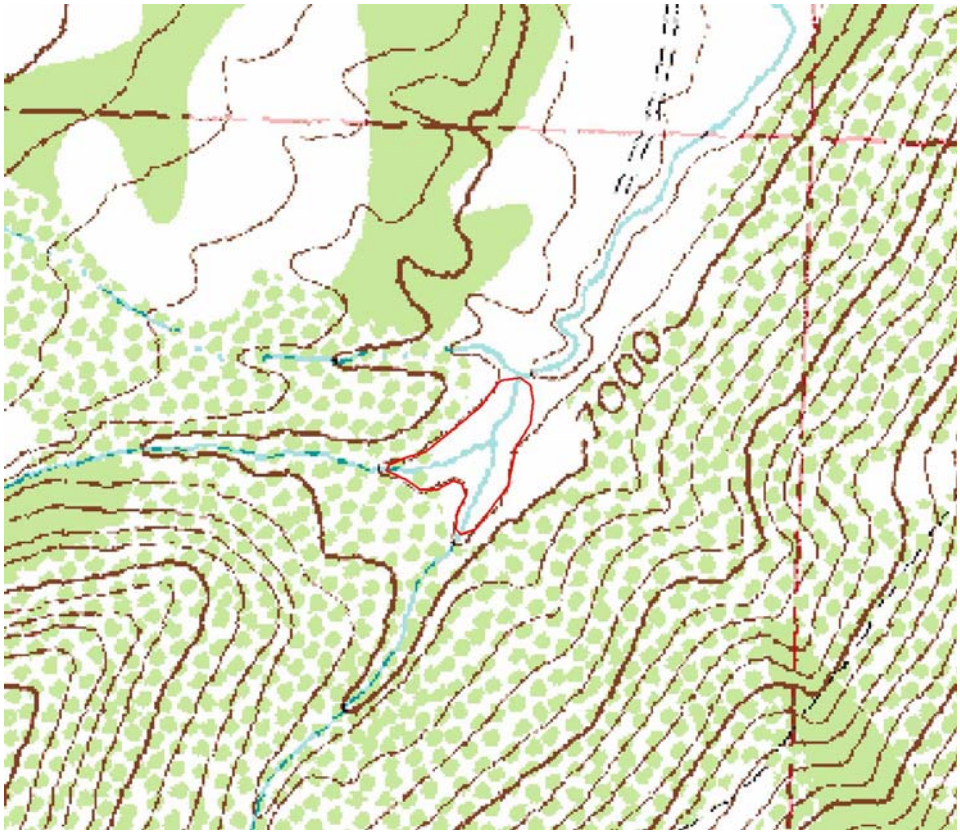
Functional-At Risk *_____

Non-Functional _____
Unknown _____
***Trend for Functional At Risk:**
Upward _____ Downward _____
Not Apparent _____

Are factors contributing to unacceptable conditions outside BLM's control or management?
Yes_____No _____X_____
If yes, what are those factors?
____Dewatering____Mining activities____Watershed condition ____Dredging activities____Road encroachment____Land ownership
Other (specify e.g., grazing, irrigation, agriculture activities) _____

Capability (ecological status that can be attained within political, social, or economical constraints or realistic goals for the assessment area)
Wetland is functioning at its capability given the constraints of topography.

Potential (ecological status that can be attained without above limiting factors or without limiting factors what is the ultimate goal for assessment area)
Wetland is functioning at potential.



Lake Creek Spring. Razorback Ridge Quad.

Lake Creek Spring. Digital Ortho Quad (USDA Aerial Field Photography Office 2005).

Lake Creek Spring.

Lake Creek Spring.

Soldier Creek BLM #2
Proper Functioning Condition

Standard Checklist

Rio Blanco County
Date: June 13, 2007
Location: 12S 4398993 707915
T4S R100W Sec 12 2 E
Razorback Ridge Quadrangle 3910865
Miles: less 0.5 miles Acres: 1

ID Team Observers: Culver and Huggins

Yes	No	N/A	HYDROLOGY
X			1) Floodplain above blankfull is inundated in "relatively frequent" events
		X	2) Where beaver dams are present they are active and stable
X			3) Sinuosity, width/depth ratio, and gradient are in balance with the landscape setting (i.e., landform, geology, and bioclimatic region)
X			4) Riparian-wetland area is widening or has achieved potential extent
X			5) Upland watershed is not contributing to riparian-wetland degradation

Yes	No	N/A	VEGETATION
X			6) There is diverse age-class distribution of riparian-wetland vegetation (recruitment for maintenance/recovery)
X			7) There is diverse composition of riparian-wetland vegetation (for maintenance/recovery)
X			8) Species present indicate maintenance of riparian-wetland soil moisture characteristics
X			9) Streambank vegetation is comprised of those plants or plant communities that have root masses capable of withstanding high streamflow events
X			10) Riparian-wetland plants exhibit high vigor
X			11) Adequate vegetative cover is present to protect banks and dissipate energy during high flows
X			12) Plant communities are an adequate source of coarse and/or large woody material for maintenance/recovery)

Yes	No	N/A	EROSION/DEPOSITION
X			13) Floodplain and channel characteristics (i.e., rocks, overflow channels, coarse and/or large woody material) are adequate to dissipate energy
		X	14) Point bars are revegetating with riparian-wetland vegetation
		X	15) lateral stream movement is associated with natural sinuosity
X			16) System is vertically stable
X			17) Stream is in balance with the water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition)

Remarks

(include description of soils e.g., gleying, mottles, texture, species list and percent cover of dominant plants, aquatic plants or animals present, human influences, watershed quality)
Soils: Loamy with peat accumulation

Plants: *Glyceria striata, Juncus balticus, Veronica americana, Poa pratensis, Eleocharis palustris, Halerpestes cymbalaria* ssp. *saximontana, Carex microptera, Juncus saximontanus, Smilacina stellatum, Torreychloa pauciflora, Symphoricarpos rotundifolius, Ribes aureum, Ribes, inerme, Rosa woodsii, Quercus gambelii, Prunus virginiana, Virgulaster ascendens, Breea arvensis, Cynoglossum officinale*

Spring is located above Soldier Creek on east slope. It is dominated by graminoids. Ground is saturated, but no open water observed. No hydrological alterations present, very little domestic livestock grazing. Bear sign observed

Summary Determination

Functional Rating:

Proper Functioning Condition X

(adequate veg., landform, or debris is present to dissipate energies, filter sediment, improve groundwater recharge, develop root masses to stabilize shoreline, restrict percolation, provide wildlife and fish habitat, support biodiversity)

Functional-At Risk *

Non-Functional

Unknown

***Trend for Functional At Risk:**

Upward _____ ____ _____Downward _____
Not Apparent _____

Are factors contributing to unacceptable conditions outside BLM's control or management?

Yes_____No _____X_____

If yes, what are those factors?

____Dewatering____Mining activities____Watershed condition ____Dredging activities____Road encroachment____Land ownership

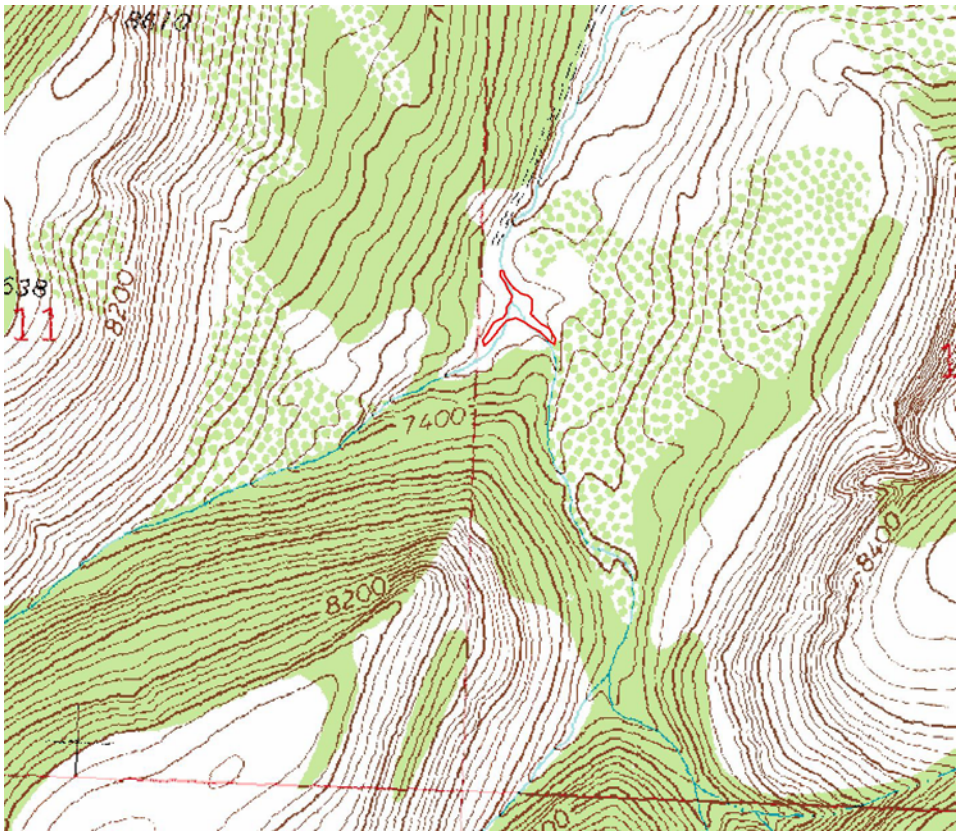
Other (specify e.g., grazing, irrigation, agriculture activities) _____

Capability (ecological status that can be attained within political, social, or economical constraints or realistic goals for the assessment area)

Wetland is functioning within its ecological status.

Potential (ecological status that can be attained without above limiting factors or without limiting factors what is the ultimate goal for assessment area)

Wetland is functioning at potential.



Soldier Creek Spring. Razorback Ridge Quad.

Soldier Creek Spring. Digital Ortho Quad (USDA Aerial Field Photography Office 2005).

Soldier Creek Spring.

Soldier Creek Spring.

Brush Creek BLM #3
Non-Functioning

Standard Checklist

Garfield County
Date: July 14, 2007
Location: T4S R99W Sec 31 4SW
Razorback Ridge Quadrangle 3910865
Miles: NA Acres: NA

ID Team Observers: Culver

Yes	No	N/A	HYDROLOGY
		X	1) Floodplain above blankfull is inundated in "relatively frequent" events
		X	2) Where beaver dams are present they are active and stable
		X	3) Sinuosity, width/depth ratio, and gradient are in balance with the landscape setting (i.e., landform, geology, and bioclimatic region)
		X	4) Riparian-wetland area is widening or has achieved potential extent
		X	5) Upland watershed is not contributing to riparian-wetland degradation

Yes	No	N/A	VEGETATION
	X		6) There is diverse age-class distribution of riparian-wetland vegetation (recruitment for maintenance/recovery)
	X		7) There is diverse composition of riparian-wetland vegetation (for maintenance/recovery)
	X		8) Species present indicate maintenance of riparian-wetland soil moisture characteristics
	X		9) Streambank vegetation is comprised of those plants or plant communities that have root masses capable of withstanding high streamflow events
	X		10) Riparian-wetland plants exhibit high vigor
	X		11) Adequate vegetative cover is present to protect banks and dissipate energy during high flows
	X		12) Plant communities are an adequate source of coarse and/or large woody material for maintenance/recovery)

Yes	No	N/A	EROSION/DEPOSITION
		X	13) Floodplain and channel characteristics (i.e., rocks, overflow channels, coarse and/or large woody material) are adequate to dissipate energy
		X	14) Point bars are revegetating with riparian-wetland vegetation
		X	15) Lateral stream movement is associated with natural sinuosity
		X	16) System is vertically stable
		X	17) Stream is in balance with the water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition)

Remarks

(include description of soils e.g., gleying, mottles, texture, species list and percent cover of dominant plants, aquatic plants or animals present, human influences, watershed quality)

The location was a dry gully, with no evidence of a spring. The gully likely holds seasonal runoff, but no groundwater discharge was detect here or adjacent gullies.

Summary Determination

Functional Rating:

Proper Functioning Condition_____
(adequate veg., landform, or debris is present to dissipate energies, filter sediment, improve groundwater recharge, develop root masses to stabilize shoreline, restrict percolation, provide wildlife and fish habitat, support biodiversity)

Functional-At Risk *_____

Non-Functional _____X_____

Unknown _____

***Trend for Functional At Risk:**

Upward _____Downward _____

Not Apparent _____

Are factors contributing to unacceptable conditions outside BLM's control or management?

Yes_____No _____X_____

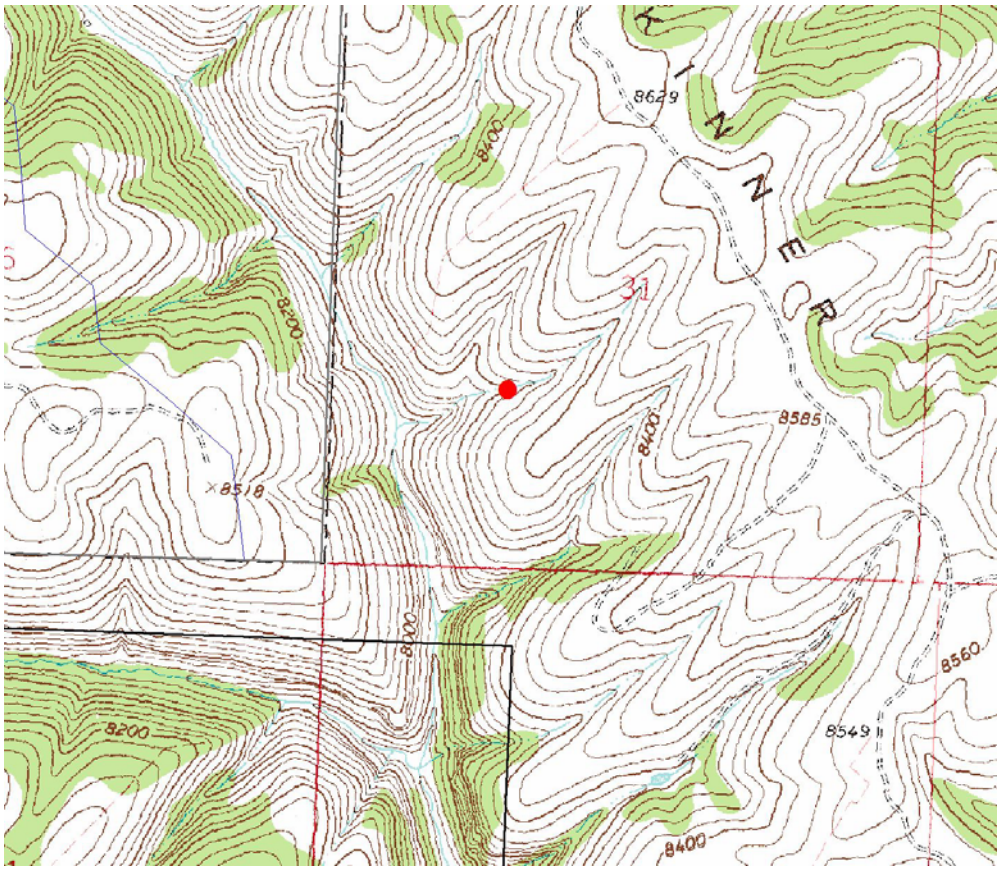
If yes, what are those factors?

____Dewatering____Mining activities ____Watershed condition ____Dredging activities____Road encroachment____Land ownership

Other (specify e.g., grazing, irrigation, agriculture activities)

Capability (ecological status that can be attained within political, social, or economical constraints or realistic goals for the assessment area)
Not applicable.

Potential (ecological status that can be attained without above limiting factors or without limiting factors what is the ultimate goal for assessment area)
Not applicable



Brush Creek Spring. Razorback Ridge Quad.

Brush Creek Spring. Digital Ortho Quad (USDA Aerial Field Photograph Office 2005).

Brush Creek

Brush Creek.

Upper Piceance Creek BLM #4
Non-Functioning

Standard Checklist

Rio Blanco County
Date: June 15, 2007
Location: T4S R94W Sec 6
Rio Blanco Quadrangle 3910768
Miles: NA Acres: NA

ID Team Observers: Culver

Yes	No	N/A	HYDROLOGY
		X	1) Floodplain above blankfull is inundated in "relatively frequent" events
		X	2) Where beaver dams are present they are active and stable
		X	3) Sinuosity, width/depth ratio, and gradient are in balance with the landscape setting (i.e., landform, geology, and bioclimatic region)
		X	4) Riparian-wetland area is widening or has achieved potential extent
		X	5) Upland watershed is not contributing to riparian-wetland degradation

Yes	No	N/A	VEGETATION
	X		6) There is diverse age-class distribution of riparian-wetland vegetation (recruitment for maintenance/recovery)
	X		7) There is diverse composition of riparian-wetland vegetation (for maintenance/recovery)
	X		8) Species present indicate maintenance of riparian-wetland soil moisture characteristics
	X		9) Streambank vegetation is comprised of those plants or plant communities that have root masses capable of withstanding high streamflow events
	X		10) Riparian-wetland plants exhibit high vigor
	X		11) Adequate vegetative cover is present to protect banks and dissipate energy during high flows
	X		12) Plant communities are an adequate source of coarse and/or large woody material for maintenance/recovery)

Yes	No	N/A	EROSION/DEPOSITION
		X	13) Floodplain and channel characteristics (i.e., rocks, overflow channels, coarse and/or large woody material) are adequate to dissipate energy
		X	14) Point bars are revegetating with riparian-wetland vegetation
		X	15) Lateral stream movement is associated with natural sinuosity
		X	16) System is vertically stable
		X	17) Stream is in balance with the water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition)

Remarks

(include description of soils e.g., gleying, mottles, texture, species list and percent cover of dominant plants, aquatic plants or animals present, human influences, watershed quality)
The location was a dry gully, with no evidence of a spring perhaps snowmelt or seasonal runoff, but spring is dry.

Summary Determination

Functional Rating:

Proper Functioning Condition_____
(adequate veg., landform, or debris is present to dissipate energies, filter sediment, improve groundwater recharge, develop root masses to stabilize shoreline, restrict percolation, provide wildlife and fish habitat, support biodiversity)

Functional-At Risk *_____

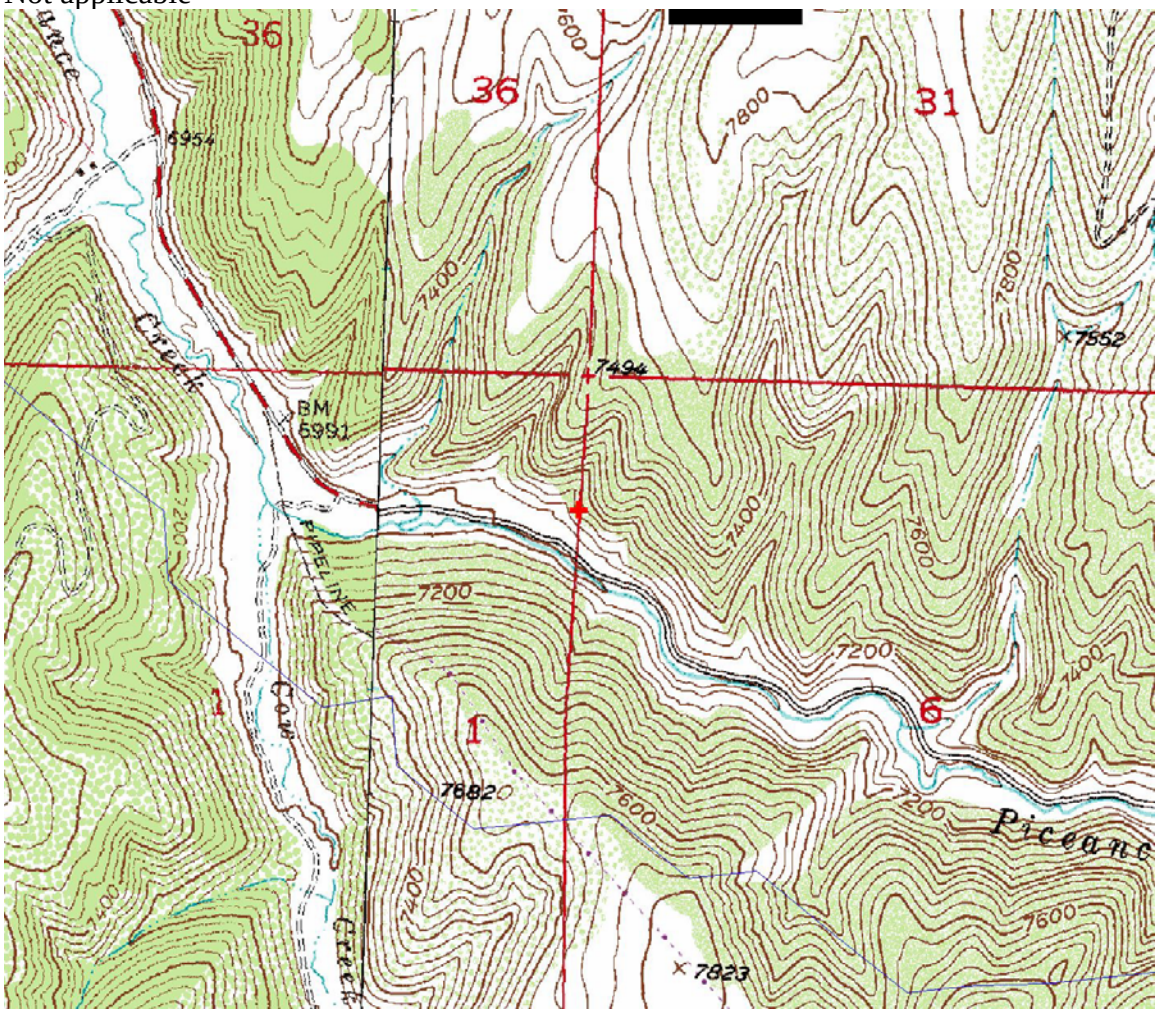
Non-Functional _____X_____

Unknown _____

***Trend for Functional At Risk:**
Upward _____Downward _____
Not Apparent _____
Are factors contributing to unacceptable conditions outside BLM's control or management?
Yes_____No _____X_____
If yes, what are those factors?
____Dewatering____Mining activities ____Watershed condition ____Dredging activities____Road encroachment____Land ownership
Other (specify e.g., grazing, irrigation, agriculture activities)

Capability (ecological status that can be attained within political, social, or economical constraints or realistic goals for the assessment area)
Not applicable

Potential (ecological status that can be attained without above limiting factors or without limiting factors what is the ultimate goal for assessment area)
Not applicable



Upper Piceance Creek. Rio Blanco Quad.

Upper Piceance Creek. Digital Ortho Quad (USDA Aerial Field Photography Office 2005).

Cow Creek BLM #5
Proper Functioning Condition
Cow Creek BLM #6
Non-Functioning

Standard Checklist

Rio Blanco County
Date: July 14, 2007
Location: 13S 4395902 247735
Rio Blanco Quad 3910768
Miles: less than 0.5 miles long Acres: 3

ID Team Observers: Culver

Cow Creek BLM #5

Yes	No	N/A	HYDROLOGY
X			1) Floodplain above blankfull is inundated in "relatively frequent" events
		X	2) Where beaver dams are present they are active and stable
X			3) Sinuosity, width/depth ratio, and gradient are in balance with the landscape setting (i.e., landform, geology, and bioclimatic region)
X			4) Riparian-wetland area is widening or has achieved potential extent
X			5) Upland watershed is not contributing to riparian-wetland degradation

Yes	No	N/A	VEGETATION
X			6) There is diverse age-class distribution of riparian-wetland vegetation (recruitment for maintenance/recovery)
X			7) There is diverse composition of riparian-wetland vegetation (for maintenance/recovery)
X			8) Species present indicate maintenance of riparian-wetland soil moisture characteristics
X			9) Streambank vegetation is comprised of those plants or plant communities that have root masses capable of withstanding high streamflow events
X			10) Riparian-wetland plants exhibit high vigor
X			11) Adequate vegetative cover is present to protect banks and dissipate energy during high flows
X			12) Plant communities are an adequate source of coarse and/or large woody material for maintenance/recovery)

Yes	No	N/A	EROSION/DEPOSITION
X			13) Floodplain and channel characteristics (i.e., rocks, overflow channels, coarse and/or large woody material) are adequate to dissipate energy
		X	14) Point bars are revegetating with riparian-wetland vegetation
X			15) Lateral stream movement is associated with natural sinuosity
X			16) System is vertically stable
X			17) Stream is in balance with the water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition)

Remarks

(include description of soils e.g., gleying, mottles, texture, species list and percent cover of dominant plants, aquatic plants or animals present, human influences, watershed quality)

Upper Cow Creek is an ephermeral spring with hydrophytic vegetation, no water. Lower Cow Creek is small streamlet, approx 1 meter wide, that runs at the bottom of a narrow ravine. Dominant plants include: *Pseudotsuga menziesii, Populus tremuloides, Prunus virginiana, Symphoricarpos rotundifolius, Juniperus communis, Bromus inermis, Poa pratensis Rumex crispus, Taraxacum officinale, , Ribes inerm.* Non native plants documented were *Verbascum thapsus* and *Cynoglossum officinale*.

Summary Determination

Functional Rating:

Proper Functioning Condition X (Cow Creek #5)
(adequate veg., landform, or debris is present to dissipate energies, filter sediment, improve groundwater recharge, develop root masses to stabilize shoreline, restrict percolation, provide wildlife and fish habitat, support biodiversity)

Functional-At Risk *_____

Non-Functional _____

Unknown _____

***Trend for Functional At Risk:**

Upward _____ Downward _____

Not Apparent _____

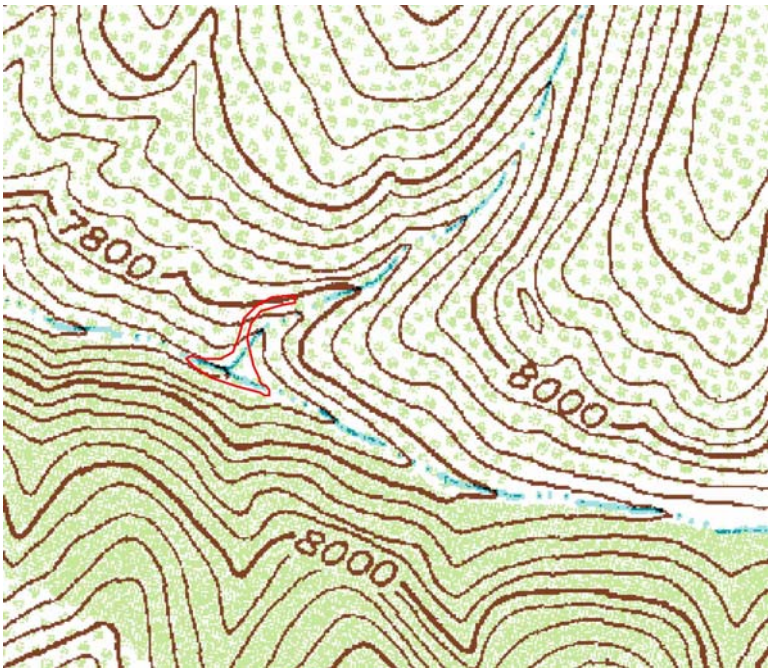
Are factors contributing to unacceptable conditions outside BLM's control or management?

Yes_____ No _____X_____

If yes, what are those factors?
____Dewatering____Mining activities____Watershed condition ____Dredging activities____Road encroachment ____Land ownership
Other (specify e.g., grazing, irrigation, agriculture activities) _____

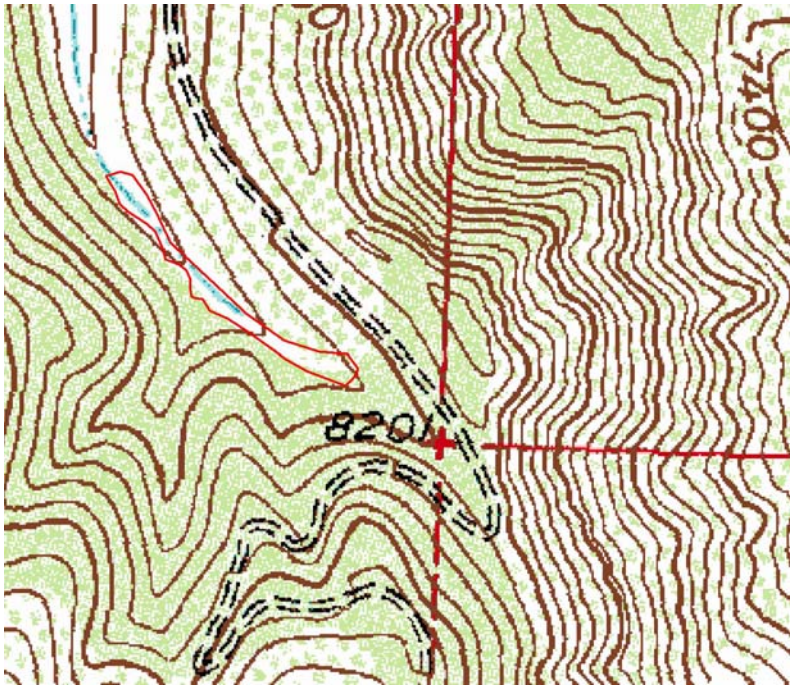
Capability (ecological status that can be attained within political, social, or economical constraints or realistic goals for the assessment area)
Wetland is at its ecological status within its immediate watershed.

Potential (ecological status that can be attained without above limiting factors or without limiting factors what is the ultimate goal for assessment area)
Wetland is functioning at its potential within its hydrogeomorphic class.



Lower Cow Creek Spring. Rio Blanco Quad.

Lower Cow Creek Spring. Digital Ortho Quad (USDA Aerial Field Photography Office 2005).



Upper Cow Creek Spring. Rio Blanco Quad

Upper Cow Creek Spring. Digital Ortho Quad (USDA Aerial Field Photography Office 2005).

Lower Cow Creek.

Lower Cow Creek

Greasewood Gulch BLM #7
Non-Functioning

Standard Checklist

Rio Blanco County
Date: June 15, 2007
Location: T1S R96W Sec 8
Greasewood Gulch 3910882
Miles: NA Acres: NA

ID Team Observers: Culver

Yes	No	N/A	HYDROLOGY
		X	1) Floodplain above blankfull is inundated in "relatively frequent" events
		X	2) Where beaver dams are present they are active and stable
		X	3) Sinuosity, width/depth ratio, and gradient are in balance with the landscape setting (i.e., landform, geology, and bioclimatic region)
		X	4) Riparian-wetland area is widening or has achieved potential extent
		X	5) Upland watershed is not contributing to riparian-wetland degradation

Yes	No	N/A	VEGETATION
	X		6) There is diverse age-class distribution of riparian-wetland vegetation (recruitment for maintenance/recovery)
	X		7) There is diverse composition of riparian-wetland vegetation (for maintenance/recovery)
	X		8) Species present indicate maintenance of riparian-wetland soil moisture characteristics
	X		9) Streambank vegetation is comprised of those plants or plant communities that have root masses capable of withstanding high streamflow events
	X		10) Riparian-wetland plants exhibit high vigor
	X		11) Adequate vegetative cover is present to protect banks and dissipate energy during high flows
	X		12) Plant communities are an adequate source of coarse and/or large woody material for maintenance/recovery)

Yes	No	N/A	EROSION/DEPOSITION
		X	13) Floodplain and channel characteristics (i.e., rocks, overflow channels, coarse and/or large woody material) are adequate to dissipate energy
		X	14) Point bars are revegetating with riparian-wetland vegetation
		X	15) Lateral stream movement is associated with natural sinuosity
		X	16) System is vertically stable
		X	17) Stream is in balance with the water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition)

Remarks

(include description of soils e.g., gleying, mottles, texture, species list and percent cover of dominant plants, aquatic plants or animals present, human influences, watershed quality)

The location was a dry gully, with no evidence of a spring. Did survey adjacent area, but found no spring.

Summary Determination

Functional Rating:

Proper Functioning Condition_____
(adequate veg., landform, or debris is present to dissipate energies, filter sediment, improve groundwater recharge, develop root masses to stabilize shoreline, restrict percolation, provide wildlife and fish habitat, support biodiversity)

Functional-At Risk *_____

Non-Functional _____X_____

Unknown _____

***Trend for Functional At Risk:**

Upward _____Downward _____

Not Apparent _____

Are factors contributing to unacceptable conditions outside BLM's control or management?

Yes_____No _____X_____

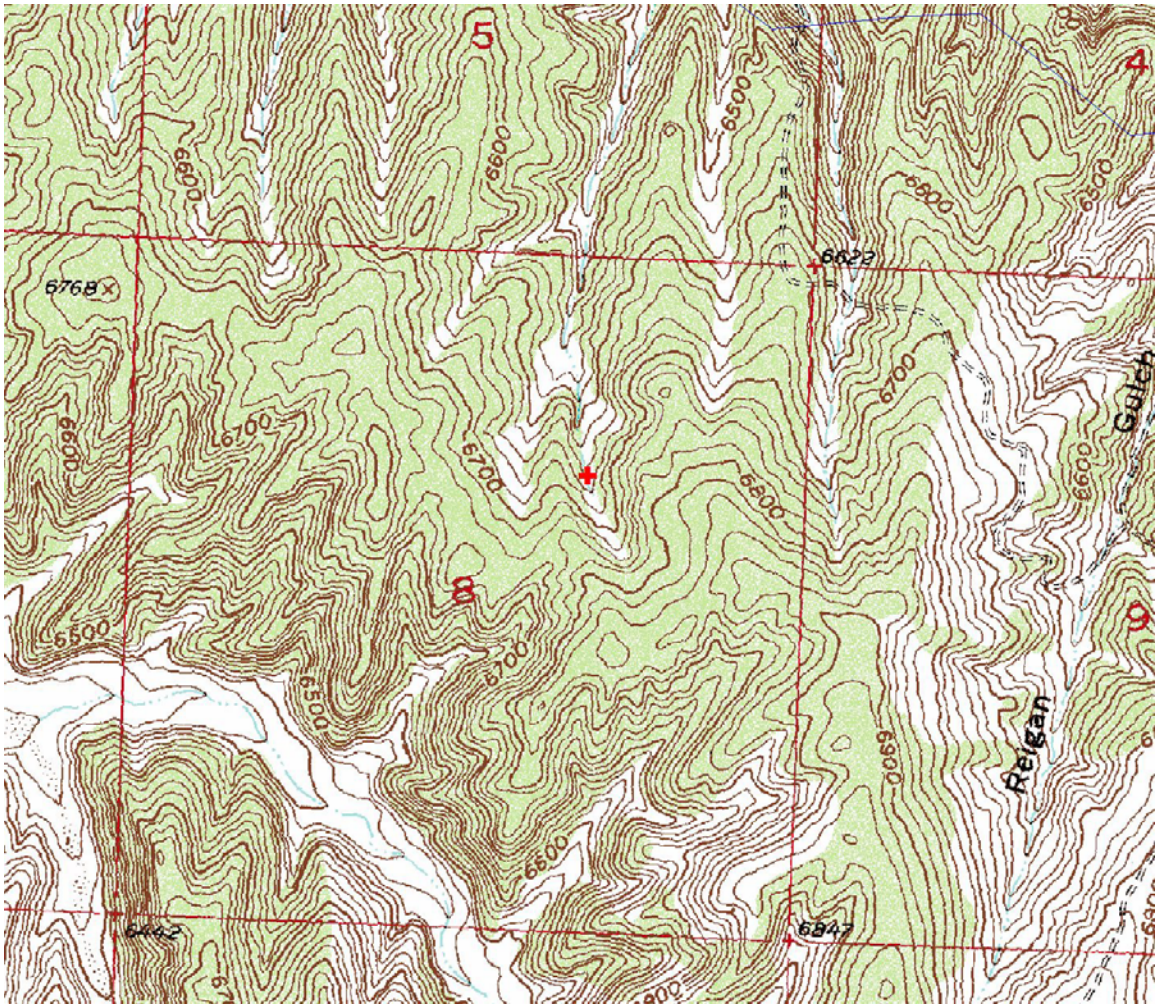
If yes, what are those factors?

____Dewatering____Mining activities ____Watershed condition ____Dredging activities____Road encroachment____Land ownership

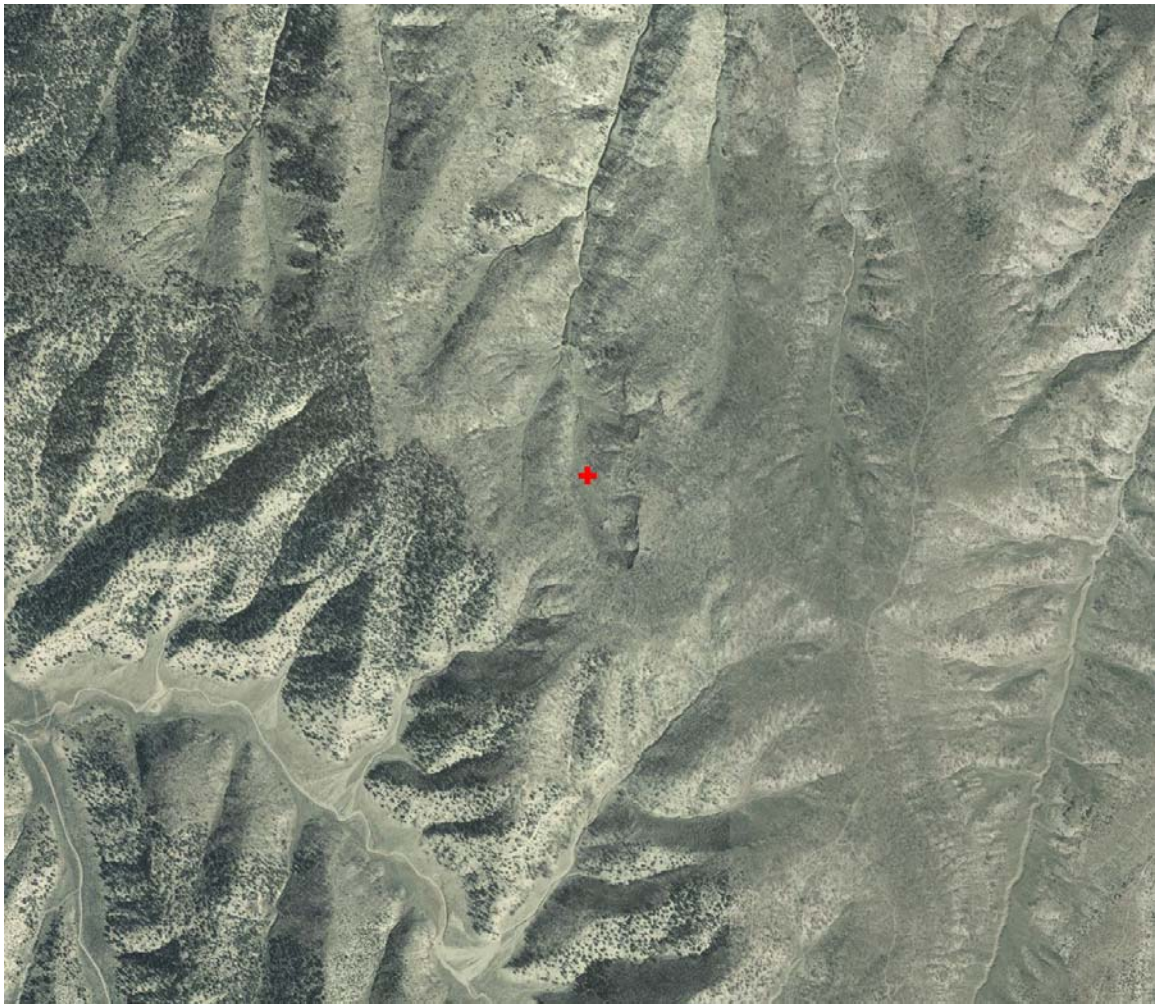
Other (specify e.g., grazing, irrigation, agriculture activities)

Capability (ecological status that can be attained within political, social, or economical constraints or realistic goals for the assessment area)
Not applicable

Potential (ecological status that can be attained without above limiting factors or without limiting factors what is the ultimate goal for assessment area)
Not applicable



Greasewood Gulch. Greasewood Gulch Quad.



Greasewood Gulch. Digital Ortho Quad (USDA Aerial Field Photography Office 2005).

Monument Gulch BLM #8
Proper Functioning Condition

Standard Checklist

Rio Blanco County
Date: June 14, 2007
Location: 12T 4450720 912921
T2N R99W Section 3 4NW
Rough Gulch Quadrangle 4010824
Miles: 0.5 miles Acres: 0.5

ID Team Observers: Culver

Yes	No	N/A	HYDROLOGY
X			1) Floodplain above blankfull is inundated in "relatively frequent" events
		X	2) Where beaver dams are present they are active and stable
X			3) Sinuosity, width/depth ratio, and gradient are in balance with the landscape setting (i.e., landform, geology, and bioclimatic region)
X			4) Riparian-wetland area is widening or has achieved potential extent
X			5) Upland watershed is not contributing to riparian-wetland degradation

Yes	No	N/A	VEGETATION
X			6) There is diverse age-class distribution of riparian-wetland vegetation (recruitment for maintenance/recovery)
X			7) There is diverse composition of riparian-wetland vegetation (for maintenance/recovery)
X			8) Species present indicate maintenance of riparian-wetland soil moisture characteristics
X			9) Streambank vegetation is comprised of those plants or plant communities that have root masses capable of withstanding high streamflow events
X			10) Riparian-wetland plants exhibit high vigor
X			11) Adequate vegetative cover is present to protect banks and dissipate energy during high flows
X			12) Plant communities are an adequate source of coarse and/or large woody material for maintenance/recovery)

Yes	No	N/A	EROSION/DEPOSITION
X			13) Floodplain and channel characteristics (i.e., rocks, overflow channels, coarse and/or large woody material) are adequate to dissipate energy
		X	14) Point bars are revegetating with riparian-wetland vegetation
X			15) lateral stream movement is associated with natural sinuosity
X			16) System is vertically stable
X			17) Stream is in balance with the water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition)

Remarks

(include description of soils e.g., gleying, mottles, texture, species list and percent cover of dominant plants, aquatic plants or animals present, human influences, watershed quality)
Soils: gleyed, anerobic
Plants: *Scirpus pungens, Alopecurus pratensis, Critesion jubatum, Eleocharis palustris.*
Non native plants: *Breea arvensis, Tamarix ramosissima*

Spring is located just north of Hwy 64. No open water noted, but soils indicated permanent saturation. Dominated by bulrush and spikerush. No hydrological alteration observed, light grazing evidence.

Summary Determination

Functional Rating:

Proper Functioning Condition X
(adequate veg., landform, or debris is present to dissipate energies, filter sediment, improve groundwater recharge, develop root masses to stabilize shoreline, restrict percolation, provide wildlife and fish habitat, support biodiversity)

Functional-At Risk *

Non-Functional

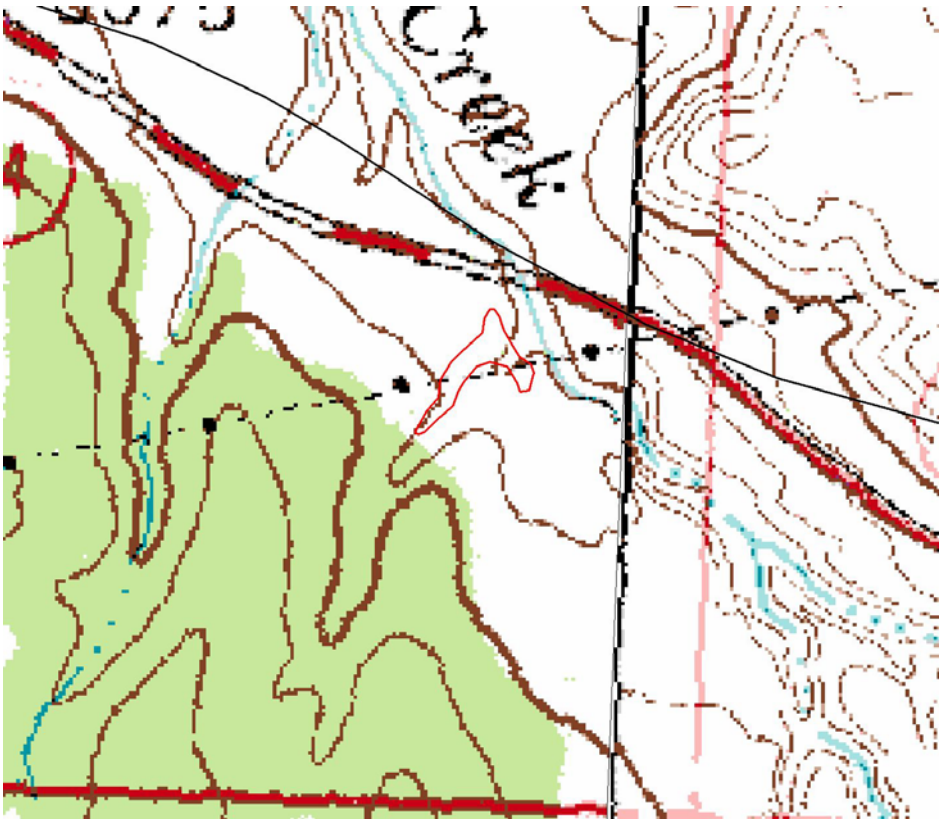
Unknown

***Trend for Functional At Risk:**
Upward Downward
Not Apparent
Are factors contributing to unacceptable conditions outside BLM's control or management?
Yes No X

If yes, what are those factors?
____Dewatering____Mining activities____Watershed condition ____Dredging activities____Road encroachment____Land ownership
Other (specify e.g., grazing, irrigation, agriculture activities)

Capability (ecological status that can be attained within political, social, or economical constraints or realistic goals for the assessment area)
Wetland is performing its ecological functions within its hydrogeomorphic class.

Potential (ecological status that can be attained without above limiting factors or without limiting factors what is the ultimate goal for assessment area)
Wetland is functioning within its ecological status.



Monument Wash. Rough Gulch Quad.

Monument Wash. Digital Ortho Quad (USDA Aerial Field Photography Office 2005).

Monument Wash.

Monument Wash.

Box Elder Spring (Creek West Coal Reservoir) BLM #9
Functioning At Risk

Standard Checklist

Moffat County
Date: June 15, 2007
Location: 12T 4455417 696632
T3N R101W Section 13 4SW
Cactus Reservoir Quadrangle 4010826
Miles: Less than 0.5 miles long Acres: approx. 3.5 acres

ID Team Observers: Culver

Yes	No	N/A	HYDROLOGY
		X	1) Floodplain above blankfull is inundated in "relatively frequent" events
		X	2) Where beaver dams are present they are active and stable
X			3) Sinuosity, width/depth ratio, and gradient are in balance with the landscape setting (i.e., landform, geology, and bioclimatic region)
X			4) Riparian-wetland area is widening or has achieved potential extent
X			5) Upland watershed is not contributing to riparian-wetland degradation

Yes	No	N/A	VEGETATION
X			6) There is diverse age-class distribution of riparian-wetland vegetation (recruitment for maintenance/recovery)
X			7) There is diverse composition of riparian-wetland vegetation (for maintenance/recovery)
X			8) Species present indicate maintenance of riparian-wetland soil moisture characteristics
X			9) Streambank vegetation is comprised of those plants or plant communities that have root masses capable of withstanding high streamflow events
X			10) Riparian-wetland plants exhibit high vigor
X			11) Adequate vegetative cover is present to protect banks and dissipate energy during high flows
X			12) Plant communities are an adequate source of coarse and/or large woody material for maintenance/recovery)

Yes	No	N/A	EROSION/DEPOSITION
X			13) Floodplain and channel characteristics (i.e., rocks, overflow channels, coarse and/or large woody material) are adequate to dissipate energy
		X	14) Point bars are revegetating with riparian-wetland vegetation
		X	15) lateral stream movement is associated with natural sinuosity
X			16) System is vertically stable
		X	17) Stream is in balance with the water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition)

Remarks

(include description of soils e.g., gleying, mottles, texture, species list and percent cover of dominant plants, aquatic plants or animals present, human influences, watershed quality)
Soils: clay loam
Plants: *Elaeagnus angustifolia, Tamarix ramosissima, Bromus inermis, Critesion jubatum, Leymus cinerus, Leymus salinus, Juncus balticus, Equisetum arvense, Halerpestes cymbalaria* ssp. *saximontana*. Seep is dry, but wetland plants indicate a high water table. Debris along dry stream bank indicates there are periodic episodes of water. Observed 3 cow elk.

Summary Determination

Functional Rating:

Proper Functioning Condition_____
(adequate veg., landform, or debris is present to dissipate energies, filter sediment, improve groundwater recharge, develop root masses to stabilize shoreline, restrict percolation, provide wildlife and fish habitat, support biodiversity)

Functional-At Risk *_____X_____

Non-Functional _____

Unknown _____

***Trend for Functional At Risk:**

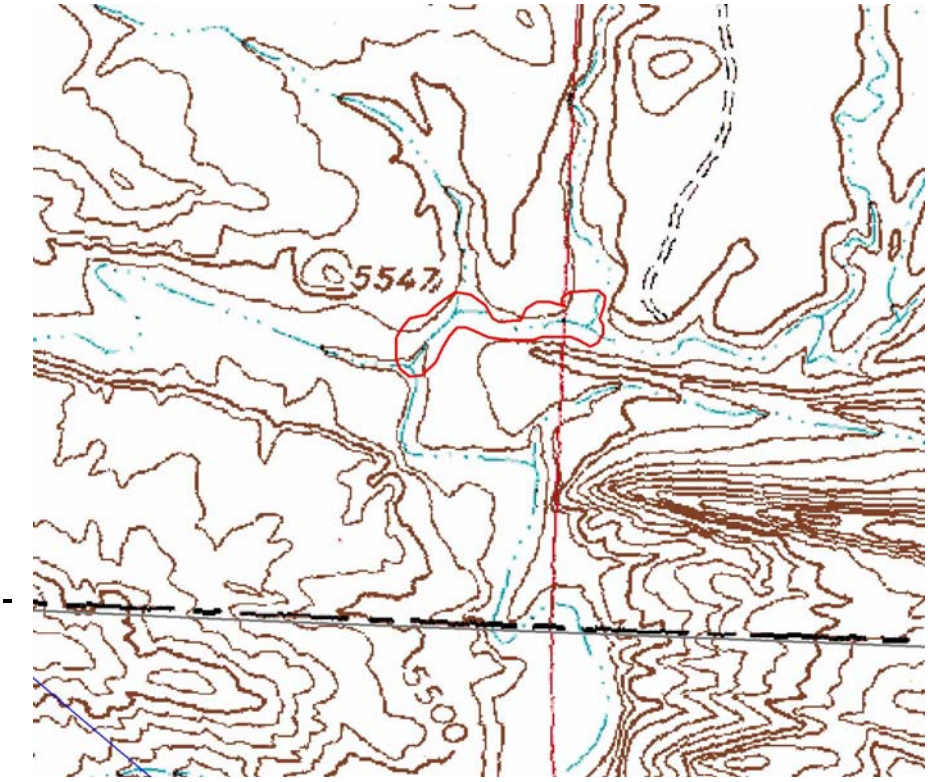
Upward _____ Downward __X_____
Not Apparent _____

Are factors contributing to unacceptable conditions outside BLM's control or management?
Yes__X_____ No _____

If yes, what are those factors?
__x__Dewatering Mining activities____Watershed condition ____Dredging activities____Road encroachment____Land ownership
Other (specify e.g., grazing, irrigation, agriculture activities)
Likely impacted by Skull Creek Reservoir.

Capability (ecological status that can be attained within political, social, or economical constraints or realistic goals for the assessment area)
Wetland is functioning below its capacity given the water restraints imposed by Skull Creek Reservoir.

Potential (ecological status that can be attained without above limiting factors or without limiting factors what is the ultimate goal for assessment area)
Wetland is not functioning at its potential due to the presence of anthropogenic disturbances.



Boxelder Creek Spring. Cactus Reservoir Quad.

Boxelder Creek Spring. Digital Ortho Quad (USDA Aerial Field Photography Office 2005).

Box Elder Creek.

Boxelder Creek.

Crooked Wash (Colorado Gulch) BLM #10
Proper Functioning Condition

Standard Checklist

Rio Blanco County
Date: June 28, 2007
Location: 12T 4452102 727155 NAD 27
Smizer Gulch Quadrangle
T3N R98N Sec 36 4NE
Miles:less than 0.5 Acres: 0.5

ID Team Observers: Culver

Yes	No	N/A	HYDROLOGY
		X	1) Floodplain above blankfull is inundated in "relatively frequent" events
		X	2) Where beaver dams are present they are active and stable
		X	3) Sinuosity, width/depth ratio, and gradient are in balance with the landscape setting (i.e., landform, geology, and bioclimatic region)
X			4) Riparian-wetland area is widening or has achieved potential extent
X			5) Upland watershed is not contributing to riparian-wetland degradation

Yes	No	N/A	VEGETATION
X			6) There is diverse age-class distribution of riparian-wetland vegetation (recruitment for maintenance/recovery)
X			7) There is diverse composition of riparian-wetland vegetation (for maintenance/recovery)
X			8) Species present indicate maintenance of riparian-wetland soil moisture characteristics
X			9) Streambank vegetation is comprised of those plants or plant communities that have root masses capable of withstanding high streamflow events
X			10) Riparian-wetland plants exhibit high vigor
X			11) Adequate vegetative cover is present to protect banks and dissipate energy during high flows
X			12) Plant communities are an adequate source of coarse and/or large woody material for maintenance/recovery)

Yes	No	N/A	EROSION/DEPOSITION
		X	13) Floodplain and channel characteristics (i.e., rocks, overflow channels, coarse and/or large woody material) are adequate to dissipate energy
		X	14) Point bars are revegetating with riparian-wetland vegetation
		X	15) Lateral stream movement is associated with natural sinuosity
X			16) System is vertically stable
X			17) Stream is in balance with the water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition)

Remarks

(include description of soils e.g., gleying, mottles, texture, species list and percent cover of dominant plants, aquatic plants or animals present, human influences, watershed quality)
Soils: mucky, gleyed
Plants: *Populus angustifolia* (mature, suckers), *Sarcobatus vermiculatus, Artemisia tridentata* ssp. *wyomingensis, Chrysothamnus nauseous, Rhus trilobata, Leymus cinerus, Juncus balticus*

Spring was flowing minimally, soils were wet, surface water present within the wash below, evidence of cattle, several song birds observed, including Rufous-spotted Towhee.

Summary Determination

Functional Rating:

Proper Functioning Condition X -
(adequate veg., landform, or debris is present to dissipate energies, filter sediment, improve groundwater recharge, develop root masses to stabilize shoreline, restrict percolation, provide wildlife and fish habitat, support biodiversity)

Functional-At Risk *

Non-Functional

Unknown

***Trend for Functional At Risk:**

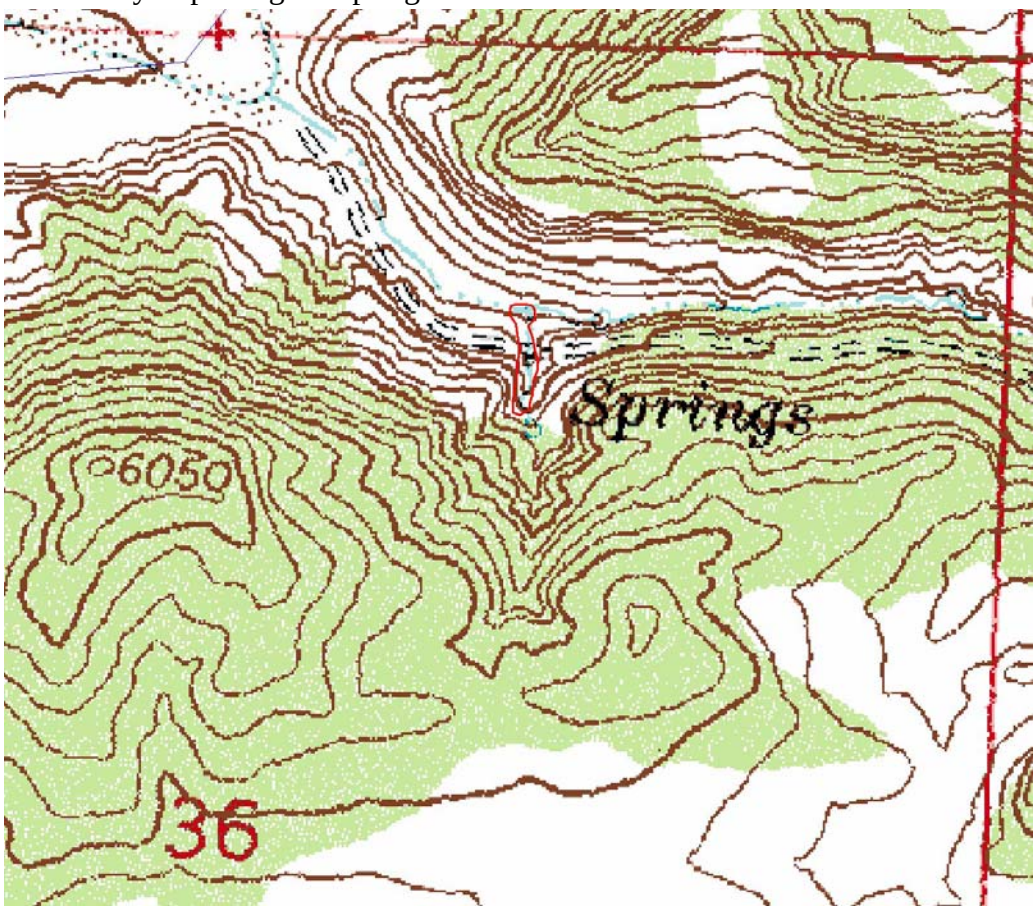
Upward Downward
Not Apparent

Are factors contributing to unacceptable conditions outside BLM's control or management?
Yes No X

If yes, what are those factors?
____Dewatering____Mining activities____Watershed condition ____Dredging activities____Road encroachment____Land ownership
Other (specify e.g., grazing, irrigation, agriculture activities) _____

Capability (ecological status that can be attained within political, social, or economical constraints or realistic goals for the assessment area)
This spring is operating within its ecological boundaries with current constraints.

Potential (ecological status that can be attained without above limiting factors or without limiting factors what is the ultimate goal for assessment area)
There is evidence of grazing, but majority of activity is in Crooked Creek Wash, not directly impacting the spring.



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Crooked Wash. Smizer Gulch Quadrangle.

Crooked Wash. Digital Ortho Quad (USDA Aerial Field Photography Office 2005).

Crooked Wash.

Crooked Wash

Meadow Creek BLM #11
Functioning At Risk

Standard Checklist

Moffat County
Date: July 15, 2007
Location: T5N R103W Sec 23 4SE
Plug Hat Rock Quadrangle, Moffat County
Miles: 0.5 Acres: 3

ID Team Observers: Culver

Yes	No	N/A	HYDROLOGY
X			1) Floodplain above blankfull is inundated in "relatively frequent" events
		X	2) Where beaver dams are present they are active and stable
	X		3) Sinuosity, width/depth ratio, and gradient are in balance with the landscape setting (i.e., landform, geology, and bioclimatic region)
X			4) Riparian-wetland area is widening or has achieved potential extent
	X		5) Upland watershed is not contributing to riparian-wetland degradation

Yes	No	N/A	VEGETATION
X			6) There is diverse age-class distribution of riparian-wetland vegetation (recruitment for maintenance/recovery)
X			7) There is diverse composition of riparian-wetland vegetation (for maintenance/recovery)
X			8) Species present indicate maintenance of riparian-wetland soil moisture characteristics
X			9) Streambank vegetation is comprised of those plants or plant communities that have root masses capable of withstanding high streamflow events
	X		10) Riparian-wetland plants exhibit high vigor
	X		11) Adequate vegetative cover is present to protect banks and dissipate energy during high flows
X			12) Plant communities are an adequate source of coarse and/or large woody material for maintenance/recovery)

Yes	No	N/A	EROSION/DEPOSITION
X			13) Floodplain and channel characteristics (i.e., rocks, overflow channels, coarse and/or large woody material) are adequate to dissipate energy
		X	14) Point bars are revegetating with riparian-wetland vegetation
X			15) Lateral stream movement is associated with natural sinuosity
	X		16) System is vertically stable
	X		17) Stream is in balance with the water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition)

Remarks

(include description of soils e.g., gleying, mottles, texture, species list and percent cover of dominant plants, aquatic plants or animals present, human influences, watershed quality)

Spring fed wetland is heavily impacted by cattle grazing. On day of survey, observed 75 individuals within the 5 acre wetland. Plants were difficult to identify due to grazing. Dominant plants are: *Carex nebrascensis, Juncus balticus Scirpus pungens, Poa pratensis, Rumex crispus*. The waterway was being incised by hoof prints, water quality is likely very poor.

Summary Determination

Functional Rating:

Proper Functioning Condition_____
(adequate veg., landform, or debris is present to dissipate energies, filter sediment, improve groundwater recharge, develop root masses to stabilize shoreline, restrict percolation, provide wildlife and fish habitat, support biodiversity)

Functional-At Risk *_____X_____

Non-Functional _____

Unknown _____

***Trend for Functional At Risk:**

Upward _____ Downward __X_____

Not Apparent _____

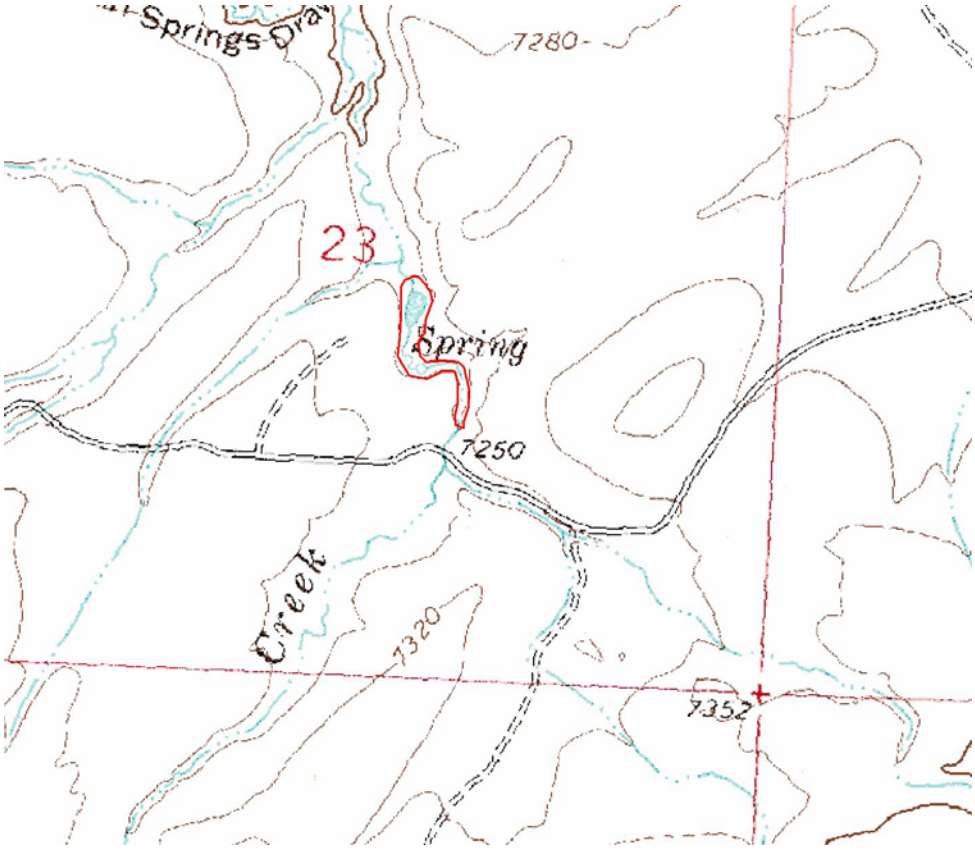
Are factors contributing to unacceptable conditions outside BLM's control or management?

Yes__X_____ No _____

If yes, what are those factors?
__X__Dewatering____Mining activities____Watershed condition ____Dredging activities____Road encroachment____Land ownership
Other (specify e.g., grazing, irrigation, agriculture activities)
Intense grazing practices

Capability (ecological status that can be attained within political, social, or economical constraints or realistic goals for the assessment area).
Wetland is functioning below its capability given the current management practices.

Potential (ecological status that can be attained without above limiting factors or without limiting factors what is the ultimate goal for assessment area)
Wetland is not functioning at its potential due to cattle grazing and spread of non native plants



Meadow Creek Spring. Plug Hat Rock, Moffat County.

No Digital Ortho Quad was available.

Meadow Creek Spring

Meadow Creek Spring.

Chase Draw BLM #12
Proper Functioning Condition

Standard Checklist

Rio Blanco County
Date: June 15, 2007
Location: 12T 4445271 690979
T2N R101W Section 20 4 NW
Rangely NE 4010827
Miles: approximately 1 mile long Acres: 2

ID Team Observers: Culver

Yes	No	N/A	HYDROLOGY
X			1) Floodplain above blankfull is inundated in "relatively frequent" events
		X	2) Where beaver dams are present they are active and stable
X			3) Sinuosity, width/depth ratio, and gradient are in balance with the landscape setting (i.e., landform, geology, and bioclimatic region)
X			4) Riparian-wetland area is widening or has achieved potential extent
X			5) Upland watershed is not contributing to riparian-wetland degradation

Yes	No	N/A	VEGETATION
X			6) There is diverse age-class distribution of riparian-wetland vegetation (recruitment for maintenance/recovery)
X			7) There is diverse composition of riparian-wetland vegetation (for maintenance/recovery)
X			8) Species present indicate maintenance of riparian-wetland soil moisture characteristics
X			9) Streambank vegetation is comprised of those plants or plant communities that have root masses capable of withstanding high streamflow events
X			10) Riparian-wetland plants exhibit high vigor
X			11) Adequate vegetative cover is present to protect banks and dissipate energy during high flows
X			12) Plant communities are an adequate source of coarse and/or large woody material for maintenance/recovery)

Yes	No	N/A	EROSION/DEPOSITION
X			13) Floodplain and channel characteristics (i.e., rocks, overflow channels, coarse and/or large woody material) are adequate to dissipate energy
		X	14) Point bars are revegetating with riparian-wetland vegetation
X			15) lateral stream movement is associated with natural sinuosity
X			16) System is vertically stable
X			17) Stream is in balance with the water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition)

Remarks

(include description of soils e.g., gleying, mottles, texture, species list and percent cover of dominant plants, aquatic plants or animals present, human influences, watershed quality) Soils: Gleyed with 20% mottles.
Plants: *Tamarix ramosissima, Rhus trilobata, Chrysothamnus linifolius, Phragmites australis, Puccinellia airoides, Critesion jubatum*

Small spring located at the base of sandstone cliff, open water present that flows into Chase Draw for approximately 200 feet before drying out. No hydrological alterations noted.

Summary Determination

Functional Rating:

Proper Functioning Condition X
(adequate veg., landform, or debris is present to dissipate energies, filter sediment, improve groundwater recharge, develop root masses to stabilize shoreline, restrict percolation, provide wildlife and fish habitat, support biodiversity)

Functional-At Risk *_____

Non-Functional _____

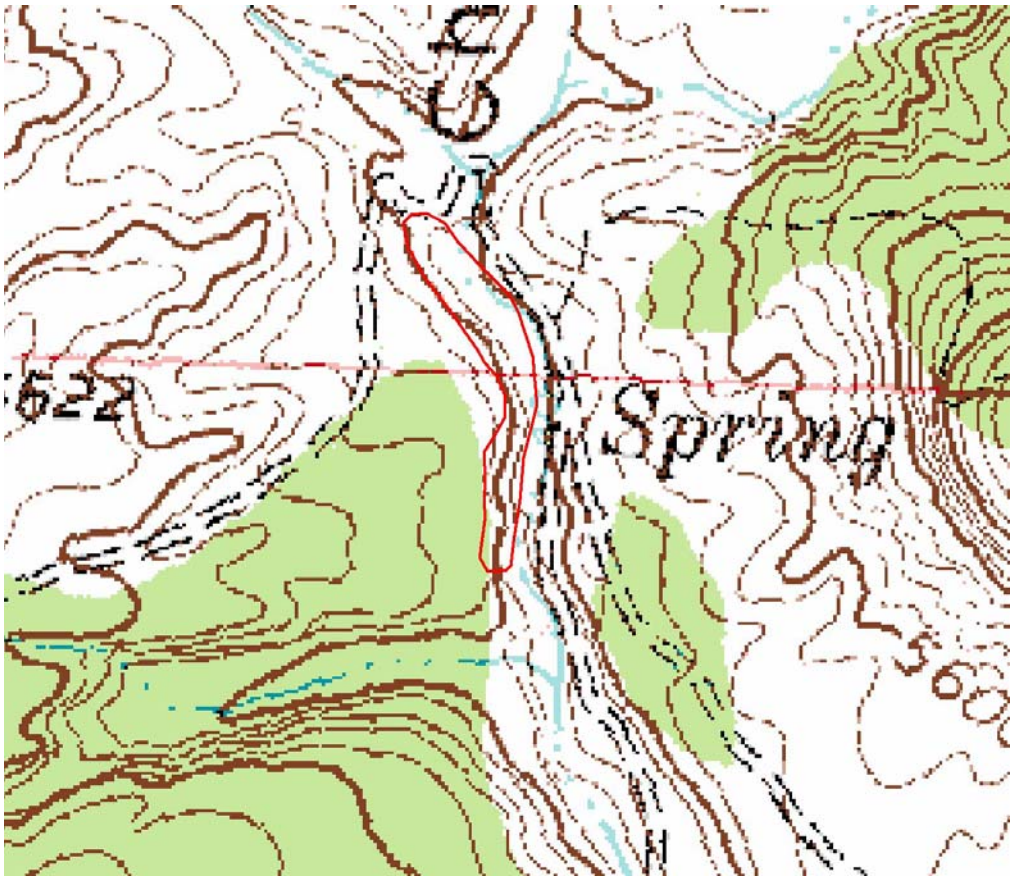
Unknown _____

***Trend for Functional At Risk:**
Upward _____ Downward _____
Not Apparent _____
Are factors contributing to unacceptable conditions outside BLM's control or management?
Yes_____ No _____X_____

If yes, what are those factors?
____Dewatering____Mining activities____Watershed condition ____Dredging activities____Road encroachment____Land ownership
Other (specify e.g., grazing, irrigation, agriculture activities) _____

Capability (ecological status that can be attained within political, social, or economical constraints or realistic goals for the assessment area)
Wetland is functioning within its class, non-native plants are likely impacting hydrology.

Potential (ecological status that can be attained without above limiting factors or without limiting factors what is the ultimate goal for assessment area)
Wetland is functioning within its ecological status.



Chase Draw Spring. Rangely NE Quad.

Chase Draw Spring. Digital Ortho Quad (USDA Aerial Field Photography Office 2005).

Chase Draw, looking southwest.

Chase Draw looking west.

Chase Draw, looking west.

Chase Draw, only open water next to county road.